

App. Serial No. 10/796,484
Docket No.: US030078 US

In the Drawings:

Attached please find eight drawing sheets, labeled Replacement Figures 1-8.
No new matter is introduced in these replacement drawings. Entry of these drawing sheets is respectfully solicited.

Attachment: 8 Drawing Sheets.

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Remarks

Claims 1-25 are currently pending in the patent application. For the reasons and arguments set forth below, Applicant respectfully submits that the claimed invention is allowable over the cited references.

The non-final Office Action dated March 3, 2006 indicated an objection under 37 C.F.R. § 1.84(o) to Figures 1-8; that claims 1-6, 9, 12-15, 17, 19, 21-22 and 24-25 stand provisionally rejected on the ground of nonstatutory obviousness-type double patenting over Avery (U.S. Application No. 10/796,480); that claims 1-24 stand rejected under 35 U.S.C. § 112(2); and that claims 1-5, 9, 12-13, 15, 17-21 and 23-25 stand rejected under 35 U.S.C. § 103(a) over Garreau (U.S. Patent 6,425,101).

Applicant respectfully traverses the objections to Figures 1-8. Applicant contends that descriptive legends are not necessary for the understanding of the Figures in compliance with 37 U.S.C. § 1.84(o). Notwithstanding the above, Applicant has added labels to Figures 1-8 in a manner largely consistent with that suggested by the Examiner and in which no new subject matter is added.

Applicant respectfully traverses the obvious-type double patenting rejections of claims 1-6, 9, 12-15, 17, 19, 21-22 and 24-25. To maintain an obviousness-type double patenting rejection, the Office Action must largely comply with the same standards as those applicable to a Section 103 rejection. In this instance, the double-patenting rejections are improper because the Office Action fails to provide any rationale behind the rejection (e.g., indicating any rationale as to why the claimed limitations are taught, suggested or otherwise obvious). Moreover, pursuant to MPEP § 804, with the remaining rejections having been addressed and overcome, these provisional rejections should be withdrawn. Notwithstanding the above, consistent with the Office Action's indication that a timely-filed Terminal Disclaimer may overcome each of the provisional, obvious-type double-patenting rejections, with a proper showing, Applicant would be willing to reconsider this traversal.

Applicant traverses the Section 112(2) rejections of claims 1-24 because the claimed limitations are readily discernable in a manner consistent with the requirements of Section 112(2), and are further supported in the specification. Specifically, as consistent with M.P.E.P. § 2173.02, "[t]he requirement to 'distinctly' claim means that the claim must

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have a meaning discernible to one of ordinary skill in the art when construed according to correct principles.” Further, a claim is indefinite “[o]nly when a claim remains insolubly ambiguous without a discernible meaning after all reasonable attempts at construction.” Here, the Office Action fails to show or allege such ambiguity as applicable to any of the claimed limitations. The following discussion more particularly addresses the impropriety of the rejections of various claim limitations under 112(2).

Regarding the Section 112(2) rejections of claims 1, 2, 4, 12, 17-19, and 24, the term “adapted to” is clear and has come to be a commonly used term in claiming an invention. A brief review of the U.S. Patent Office’s own database indicates that the term “adapted” has been used in the claims of over 162,000 issued patents in recent years. Moreover, the specification describes various examples that may be applicable to such limitations. For instance, the discussion in the specification in connection with FIG. 1 describes example embodiments directed to a communications link that is coupled (*e.g.*, adapted to communicatively couple) to a user interface by way of an RS232 port. In view of the foregoing, Applicant contends that the scope of the claims is ascertainable and therefore the §112 should be withdrawn.

Regarding the Section 112(2) rejection of claim 4, the specification describes various example embodiments that may be relevant to the claim terms “on the configured circuit and between the configured circuit” and “coupled.” For example, page 6, lines 10-25 describe a configurator arrangement coupled to a configurable circuit and programmed to switch circuit paths in the configurable circuit for passing test signals. The test signals are monitored in the configurable circuit and the test signal path switching circuits deliver the test signals to and/or from a specific circuit that is on the configurable circuit and/or coupled to the configurable circuit. In an additional example, Fig. 1 shows a configured circuit that can be coupled to other configured circuits by way of input and output pins for communicating JTAG test signals (*see, e.g.*, page 3, lines 13-19).

The Section 112(2) rejection of claim 6 is improper because the indicated claim terms “separably” and “operable” would be understood by one of ordinary skill in the art (*e.g.*, as “capable of separate operation”) and are supported by examples in the specification. For instance, the specification describes various example embodiments including, for example, the microcontroller operating before power-up of the configurable circuit in order

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to perform diagnostics before operating the configurable circuit (*see, e.g.*, page 3, lines 25-29).

The Section 112(2) rejection of claim 13 is improper because the indicated claim terms “at least one of the JTAG test nodes” and “data” would be understood by one of ordinary skill in the art, and are supported by examples in the specification. For instance, the specification describes various example embodiments including, for example, the indication of data that can include test signals, switch settings, clock frequencies, board voltages, JTAG operations, and diagnostic characteristics (*see, e.g.*, page 3, lines 14-25). In addition page 16, lines 24-26 discuss example applications directed to the routing of data to and from JTAG-compatible components, in reference to FIG. 8.

The Section 112(2) rejection of claim 15 is improper because the indicated claim terms “JTAG test data” would be understood by one of ordinary skill in the art as, for example, data relevant to a JTAG test such as test or response information, and are supported by examples in the specification. For instance, the specification describes various example embodiments in connection with Fig. 1, including a configured circuit that can be coupled to other configured circuits by way of input and output pins for communicating JTAG test signals (*see, e.g.*, page 3, lines 13-19).

Regarding the Section 112(2) rejection of claim 19, the specification describes various example embodiments including that shown in and described in connection with Fig. 8. For example, Fig. 8 shows an inter-connectable circuit board on which a reprogrammable microcontroller (840) is located; this inter-connectable circuit board can be coupled with other inter-connectable circuit boards and test data is routed between them. (page 15, lines 28-31).

In view of the above, Applicant submits that all of the Section 112(2) rejections specifically addressed above are improper and should be removed. However, notwithstanding the above, Applicant has made minor amendments to certain claims to facilitate readability of claim phraseology or terminology in a manner not inconsistent with that suggested by the Examiner. In view of the discussion herein, Applicant requests that the Section 112(2) rejections be removed.

Applicant respectfully traverses the Section 103(a) rejections over the Garreau reference because the cited portions of the reference do not correspond to the discussion

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in the Office Action. In this regard, the Office Action has failed to state the rejection in a manner consistent with 35 U.S.C. §132, in that the Applicant is unable to understand the rejection and/or to adequately evaluate the rejection and respond thereto. Specially, the Office Action appears to incorrectly cite various portions of the Garreau reference in attempting to show support for the claim rejections. For example, page 11 of the Office Action cites to a programmable controller (20) from Fig. 2 & 4 of which there is no correspondence. On page 12, the Office Action cites to a connector (412-10) to connect vertical data line (402-3) to the JTAG controller (210) by way of I/O line (211-2); however, connector (412-10) is connected to I/O line (211-1). Other citations are similarly confusing. In this regard, Applicant submits that the rejections are improper and should be removed. Notwithstanding these improprieties, Applicant has attempted to address the rejections in the following as best possible.

Applicant traverses the section 103(a) rejections because the references cited by the Office Action do not teach or suggest all of the limitations found in the claimed invention. For example, the cited portion of the Garreau reference does not teach or suggest the limitations of independent claims 1, 12, 24, and 25 directed to a communications link adapted to communicatively couple an external user-controlled device and a programmable microcontroller for passing reconfiguration-control signals to the programmable microcontroller. In this regard, the Section 103 rejections of independent claims 1, 12, 24, and 25 (and those that depend therefrom) are improper and should be removed.

Regarding independent claim 19, the Garreau reference does not teach or suggest limitations directed to routing JTAG test signals along a JTAG circuit path on at least one of the inter-connectable circuit boards. The Garreau reference appears limited in application to the routing of test signals between an off-chip JTAG controller (210) and an integrated circuit (IC1-IC4) through the use of a programmable switch (400), and fails to teach or suggest the routing of JTAG test signals on an inter-connectable circuit board as in claim 19 (*e.g.*, via a reprogrammable microcontroller). *See, e.g.*, Fig. 4 of the Garreau reference. Accordingly, the Section 103(a) rejection of independent claim 19 is improper and Applicant requests that it be withdrawn.

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The Section 103(a) rejections of dependent claims 2-11 (which depend from claim 1), 13-18 (which depend from claim 12), and 20-23 (which depend for claim 19), are also improper for the reasons discussed above. However, the impropriety of the rejections of certain other limitations in the dependent claims are addressed in greater detail as follows.

Generally regarding claims 4, 15, 20 and 23, the Garreau reference does not teach or suggest limitations directed to JTAG signal path switches adapted to route JTAG signals on a configured circuit, or between a configured circuit and other configured circuits as claimed. The cited portion of the Garreau reference teaches routing test signals between a JTAG controller (210) and an integrated circuit (IC1-IC4) through the use of a programmable switch (400) (*see, e.g.*, FIG. 4 of the Garreau reference). It appears that Garreau's programmable switch (400) selectively (independently) connects the JTAG controller (210) to the integrated circuits (IC1-IC4). (*See, e.g.* Fig. 4, col. 7, lines 29-58) As such, the integrated circuits in the Garreau reference are not coupled to each other and test signals are not routed between the integrated circuits, between configured circuits or between interconnected circuit boards. Therefore, the cited portions of the Garreau reference do not teach or suggest the limitations of claims 4, 15, 20 and 23. Accordingly, the Section 103(a) rejections of the dependent claims as discussed above are also improper and should be withdrawn.

Notwithstanding the above, certain claims have been amended in a manner not inconsistent with the claims as filed, and consistent with the specification. For example, the preamble in each of claims 1, 12, 24 and 25 has been amended to more expressly set forth that the routing circuitry is on the configured circuit. Applicant notes that this change is not being made for any patentability reasons relative to the claim rejections made in the Office Action (the rejections fail for the reasons discussed above). Support for these amendments can be found, for example, in the specification, at page 6, lines 10-15. The claims are also allowable over the cited references because the references do not teach or suggest limitations directed to, for example, routing circuitry located on the configured circuit. Accordingly, the Section 103(a) rejections of the claims are improper and Applicant requests that they be withdrawn.

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In view of the remarks above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Peter Zawilski, of Philips Corporation at (408) 474-9063.

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